

Page 1

THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF GEORGIA  
ATLANTA DIVISION

DONNA CURLING, et al.,

Plaintiffs,

CIVIL ACTION FILE

vs.

NO. 1:17-CV-2989-AT

BRAD RAFFENSPERGER, et

al.,

Defendants.

VIDEOTAPED DEPOSITION OF

ANDREW W. APPEL, Ph.D.

TAKEN BY REMOTE VIDEOCONFERENCE

January 27, 2022

7 : 33 a.m.

REPORTED REMOTELY BY:

LAURA R. SINGLE, CCR-B-1343

Page 2

## 1 A P P E A R A N C E S

2 (All appearing remotely)

3  
4 For the Curling Plaintiffs:

5 DAVID CROSS, Esq.

6 NICHOLAS W. KENNEDY, Esq.

7 Morrison &amp; Foerster, LLP

8 2000 Pennsylvania Avenue, N.W. - Suite 6000

9 Washington, D.C. 20006

10 (202) 887-1500

11 dcross@mofo.com

12 For the Diggs Plaintiffs:

13 CARY ICHTER, Esq. (for a portion)

14 Ichter Davis, LLC

15 3340 Peachtree Road, N.E.

16 Suite 1530, Tower Place 100

17 Atlanta, Georgia 30326

18 (404) 869-7600

19 cichter@ichterdavis.com

20 For the Fulton County Defendants:

21 DAVID LOWMAN, Esq.

22 Fulton County Attorney's Office

23 141 Pryor Street - Suite 4038

24 Atlanta, Georgia 30303

25 (404) 612-0246

david.lowman@fultoncountyga.gov

Page 3

## 1 A P P E A R A N C E S

2 (All appearing remotely)

3

4 For the State Defendants:

5 CAREY MILLER, Esq.

6 NICHOLAS W. KENNEDY, Esq.

7 Robbins Alloy Belinfante Littlefield, LLC

500 14th Street, N.W.

7 Atlanta, Georgia 30318

8 (678) 701-9381

9 cmiller@robbinsfirm.com

10

11

12

13

14

15

Also Present:

16

Logan Wren, Law Clerk

17

(Morrison &amp; Foerster, LLP)

18

Marilyn Marks, Executive Director

19

(Coalition for Good Governance)

20

Krishan Patel, Videographer

21

(Veritext Legal Solutions)

22

23

24

25

Page 4

1

## I N D E X

2

3	EXAMINATION OF ANDREW W. APPEL, Ph.D.	PAGE
4	BY MR. MILLER.....	7
5	BY MR. CROSS.....	124
6	BY MR. MILLER.....	137
7	BY MR. CROSS.....	142

8

9 \* \* \*

10

11	NUMBER	DESCRIPTION	PAGE
12	For the Defendants:		
13	Exhibit 1	Notice of Deposition of Andrew W. Appel	8
14	Exhibit 2	Declaration of Andrew W. Appel in Support of Motion for Preliminary Injunction	10
15	Exhibit 3	Expert Report of Andrew W. Appel, 6/28/2021	12
16	Exhibit 4	Declaration of Andrew W. Appel in Support of Motion for Preliminary Injunction	20
17	Exhibit 5	Declaration of Andrew W. Appel in Support of Motion for Preliminary Injunction	29
18	Exhibit 6	Declaration of Juan E. Gilbert, Ph.D.	31

24

25

Page 5

1

## I N D E X

2

NUMBER	DESCRIPTION	PAGE
For the Defendants:		
Exhibit 7	State Defendants' Expert Disclosures – Reports	78
Exhibit 8	Rebuttal Report of Andrew W. Appel, 7/30/21	82
Exhibit 9	Freedom to Tinker article entitled, Georgia's Election Certification Avoided an Even Worse Nightmare That's Just Waiting to Happen Next Time	87
Exhibit 10	Freedom to Tinker article entitled, Did Sean Hannity misquote me?	94
Exhibit 11	Freedom to Tinker article entitled, Voting Machines I Recommend	106
Exhibit 12	Document entitled, Scientists say no credible evidence of computer fraud in the 2020 election outcome, but policymakers must work with experts to improve confidence	113

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

Page 38

1 it's malfunctioning because it's been hacked to  
2 cheat, it may well print on to the ballot summary a  
3 candidate selection that completely disagrees with  
4 the voter's intent as the voter expressed it in  
5 touching the touch screen. So in that case the  
6 voter's intent would be absolutely not clear in the  
7 ballot summary.

8 Q. Got it.

9 So the only time where you disagree with the  
10 voter's intent being clear is with respect to a  
11 malfunctioning BMD whether because of hacking or  
12 other reasons? Is that accurate?

13 A. That's right.

14 Q. Okay. So let's go back to Exhibit 3, and  
15 that would be your July -- the date of June 28, 2021.  
16 I apologize. I will mix those up. I refer to them  
17 as July because that's when they were served to us --

18 A. Got it.

19 Q. -- just so -- so if you'll scroll with me to  
20 paragraph 12.

21 A. Got it.

22 Q. You state there: I've not been asked to  
23 perform a forensic cyber security examination of any  
24 specific voting machine.

25 Do you see that?

Page 39

1 A. Yes.

2 Q. And is that still accurate?

3 A. Yes.

4 Q. Have you performed any other type of  
5 examination of a specific voting machine for your  
6 report in this case?

7 A. In this case, no.

8 Q. Okay. Of course, you've looked at many  
9 different voting machines, many different kinds of  
10 examinations. Would that be right?

11 A. I have performed some examinations of  
12 specific voting machines myself, and I have read the  
13 scientific literature for detailed descriptions of  
14 other examinations of other voting machines, yes.

15 Q. Okay. And have you read the scientific --  
16 excuse me. I'm going to strike that. There's a fire  
17 truck passing. I apologize.

18 Have you read the scientific literature or  
19 any other reports as it relates to the Dominion  
20 voting machines utilized in Georgia?

21 A. I've read various things about the Dominion  
22 machines, but I have not read a cyber security  
23 examination report for those machines.

24 Q. What kind of things have you read about the  
25 machines?

Page 40

1           A. I've read the Dominion literature. I may  
2 have read the independent test lab report. I may  
3 have interviewed people who have used similar types  
4 of Dominion machines in other states.

5           Q. When you say interviewed people, who did you  
6 interview?

7           A. Most recently I talked to a voter in Camden  
8 County, New Jersey, who used a similar machine in  
9 2019.

10          Q. Just a general voter you found?

11          A. She had contacted me because she was  
12 interested in Camden County's selection process for  
13 voting machines.

14          Q. Do you recall this person's name?

15          A. Rena, R-E-N-A, and I can't recall her last  
16 name at the moment.

17          Q. That's okay.

18                   So in light of not performing any  
19 examination of the machines utilized in Georgia, you  
20 don't feel that prevents you from offering your  
21 opinions in here; is that right?

22          A. That's right.

23          Q. Okay. And sort of related to the not  
24 examining machines, have you examined any other  
25 election system adjacent items utilized in Georgia?

Page 41

1 And by that I mean items like the voter registration  
2 database or the IT infrastructure of the Secretary of  
3 State's office?

4 A. No.

5 Q. And with respect to specific voting machine,  
6 would that include the poll pads used for voter  
7 check-in?

8 A. I have not examined those.

9 Q. Okay. So if you'll scroll with me to  
10 paragraph 20.

11 A. Yes.

12 Q. And you say there: It is a clear scientific  
13 consensus that any computer-based voting machine can  
14 be hacked.

15 Do you see that?

16 A. Yes.

17 Q. Do you understand any expert in this case to  
18 disagree with you on that statement?

19 A. No.

20 Q. So you go on in paragraph 21 to say: It is  
21 a clear scientific consensus that the only practical  
22 solution to this problem (that is secure enough for  
23 use in public elections) is to mark votes on  
24 voter-verified paper ballots that can be recounted or  
25 audited by hand.

Page 67

1 Q. Have you seen reports of that for the  
2 Dominion equipment used in Georgia?

3 A. No.

4 Q. Okay. So accepting that first sentence of  
5 42 applies to ballot-marking devices with the caveats  
6 you described there, right?

7 A. Right.

8 Q. With the second sentence saying, therefore,  
9 it is reasonable, would that not similarly apply to  
10 ballot-marking devices?

11 A. No. In the paragraphs starting at 43, 44,  
12 and following explain why.

13 Q. Okay. If you'll turn with me to paragraph  
14 67.

15 A. All right.

16 Q. And here in this paragraph you're talking  
17 about a hypothetical hacker that has installed  
18 fraudulent software in a BMD, right?

19 A. Right.

20 Q. Have you seen fraudulent software installed  
21 in a BMD that switches votes?

22 A. No.

23 Q. Are you aware of any such fraudulent  
24 software?

25 A. That has been used in actual elections, no.

Page 85

1 this, right?

2 A. Yes.

3 Q. Okay. Are you aware of fraudulent software  
4 like that that self-propagates to multiple BMDs?

5 A. Yes.

6 Q. And where is that?

7 A. The concept of fraudulent software that  
8 propagates on removable media from one computer to  
9 another, not specifically in the context of  
10 elections, was first explained to me in approximately  
11 1979. And the first demonstration of this on actual  
12 voting machines was done by a scientific study at  
13 Princeton University in -- published in 2006 where it  
14 was done on the exact model of voting machine that  
15 was in use in Georgia between about that time and  
16 2018.

17 Q. So I think my question was a little more  
18 specific to that as to BMDs. Are you aware of such  
19 software existing?

20 A. Am I aware that someone has created any such  
21 software specifically for a BMD, no.

22 Q. Okay. And in that Princeton study you were  
23 referring to, how did that fraudulent software  
24 self-propagate?

25 A. It propagated on the removable media that

Page 100

1 efficient method a hacker could use is to do it one  
2 machine at a time by a screwdriver.

3 Q. We just discussed that you're not aware of  
4 both self-propagating and adaptable malware, right?

5 A. I'm aware of how straightforward it is in  
6 principal to build each of those and combine them  
7 together. I am not aware of a hacker who has done  
8 that to an actual BMD.

9 Q. Whether in a lab or in an actual election,  
10 right?

11 A. Right.

12 Q. So if you're not aware of it, let's talk  
13 about what we know you are aware of, which is  
14 individually adaptable but not self-propagating,  
15 right?

16 A. Yeah.

17 Q. Okay. So that would require access to  
18 individual BMDs; would it not?

19 A. If it's not self-propagating.

20 Q. Okay.

21 A. Well, there's self-propagating and -- yeah.  
22 All right. If you want to -- if you want to talk  
23 about malware that does not propagate by means of  
24 network server removable media, that would require  
25 access to individual BMDs.

Page 101

1 Q. I'm trying to use the same terminology  
2 you --

3 A. Yeah. I'm not aware of a specific piece of  
4 malware that is both self-propagating and adaptable,  
5 but there is no scientific difficulty in combining  
6 those two concepts into the same piece of malware.

7 Q. Okay. But you've never done it?

8 A. I've never done it.

9 Q. And you're not aware that anybody has ever  
10 done it, right?

11 A. Right.

12 Q. Okay. So accepting that, let's talk about  
13 what we are aware of, which is adaptable but not  
14 self-propagating, right?

15 A. We can talk about adaptable but not  
16 self-propagating malware.

17 Q. So do you have -- going back to the  
18 seven-minute timeframe, do you have any reason to  
19 believe implanting that adaptable but not  
20 self-propagating malware into a BMD would take any  
21 shorter or longer time than what it took you to  
22 implant it on this --

23 A. I would expect it would take a shorter time.  
24 The seven minutes it took me to install the malware  
25 in a Sequoia AVC Advantage BMD required, you know,

Page 145

1 CERTIFICATE  
2  
3STATE OF GEORGIA:  
COUNTY OF GWINNETT:

I hereby certify that the foregoing transcript was taken down, as stated in the caption, and the colloquies, questions and answers were reduced to typewriting under my direction; that the transcript is a true and correct record of the evidence given upon said proceeding.

I further certify that I am not a relative or employee or attorney of any party, nor am I financially interested in the outcome of this action.

I have no relationship of interest in this matter which would disqualify me from maintaining my obligation of impartiality in compliance with the Code of Professional Ethics.

I have no direct contract with any party in this action and my compensation is based solely on the terms of my subcontractor agreement.

Nothing in the arrangements made for this proceeding impacts my absolute commitment to serve all parties as an impartial officer of the court.

This the 13th day of February, 2022.



---

LAURA R. SINGLE, CCR-B-1343